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EXAMINER

POLLACK, MELVIN H

ART UNIT

PAPER NUMBER

2145

DATE MAILED: 05/09/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/488,945

Applicant(s)

AMES ET AL.

Examiner

Melvin H. Pollack

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 06 December 2004.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 18,20-26,28,29,37,44-51,53-58,60-69 and 71-75 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 18,20-26,28,29,37,44-51,53-58,60-69 and 71-75 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 19 January 2000 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☒ Other: see attached office action.

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 12/6/04 has been entered.

### ***Response to Arguments***

2. Applicant's arguments filed 12/6/04 have been fully considered but they are not persuasive. A discussion of the limitations is provided below.
3. In the response to the last office action, the applicant changed the scope of the claims by adding transparency and/or switch positioning to all independent claims, in a variety of methods. The examiner acknowledges that no new matter has been added by this amendment.
4. Perlman teaches a "bridge-like IP router (BLIP) that functions exactly like a bridge for non-TCP/IP traffic, and functions in a bridge-like manner for TCP/IP traffic (col. 5, lines 13-23)" which includes various databases to provide the functionality of using IP addresses (Level-3 addresses) to determine data link layer addresses (Level-2 addresses) and port locations, and forward them as a result (col. 6, lines 5-35 in light of the "computer network background" section and col. 8, line 50 – col. 9, line 20). The examiner will use the BLIP as the switch mentioned in the claims. As the claims do not specify particular switch functionality, a device which functions as claimed may be used.

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5. Applicant claims that Perlman does not expressly disclose that the BLIP, through “a second plurality of ports,” is “directly coupled to a router so that the switch is interposed between the router and the plurality of devices (i.e. Fig. 2).” As will be shown below, the examiner interprets this phrase to mean that the BLIP may communicate via sending messages to the router. Perlman teaches IP routers (Fig. 1, #26 and #28; col. 8, lines 17-20) in which the BLIP knows the location of the router, and sends messages directly to it (Fig. 2, #48; col. 9, lines 38-42). Furthermore, the BLIP can work with and receive messages from the router, passing messages from sender to router and from router to receiver (col. 13, lines 1-40). Therefore, the coupling of a router to a BLIP is taught.

6. Applicant claims that Perlman does not expressly disclose transparency of the BLIP to the devices and routers. The abstract of Perlman states that “The device of the invention functions to... generate ARP replies that render the device of the invention transparent to hosts within the extended LAN. The device is also transparent to true IP routers, which may still be used to effect communication with points outside the extended LAN.” This is a desired function that BLIPs emulate from normal bridges (col. 4, lines 30-35), and is performed through certain tricks such as ARP message handling (Figs. 2 and 3). Hence, the prior art teaches this limitation as well.

7. Because the art still reads on the claims as drawn, the original rejection is maintained.

***Claim Rejections - 35 USC § 112***

8. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

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9. Claims 18, 20-26, 28, 29, 37, 44-51, 53-58, 60-69, and 71-75 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. All independent claims utilize the phrase "direct coupling" between the router and switch, as opposed to "coupling" between the switch and devices. It is unclear whether the term means that there is a direct physical connection such as a peripheral/bus wire, if there is direct communication such as messages sent directly to the router, or simply that the router and switch are on the same logical network path. There is also insufficient enablement to determine whether a device, i.e. a repeater or gateway server, may be placed between the switch and router. For the purposes of this office action, the examiner will assume that the applicant desires direct connectivity without any interceding devices, but that a physical connection is not required. Applicant must clarify this issue, and cite enabling specification areas.

***Claim Rejections - 35 USC § 102***

10. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

11. Claims 18, 20-22, 28, 29, 45, 46, 48, and 49 are rejected under 35 U.S.C. 102(b) as being anticipated by Perlman et al. (5,309,437).

12. For claim 18, Perlman teaches (abstract; col. 1, line 1 – col. 7, line 40) a switch (Fig. 1, #22; BLIP) comprising:

- a. A plurality of ports (col. 5, lines 35-37) including:
    - i. A first plurality of ports adapted for coupling to a plurality of devices, including a source device being a member of a first network (Fig. 1, #12) and a destination device being a member of a second network (Fig. 1, #14; col. 8, lines 10-20), and
    - ii. A second plurality of ports directly coupled to a router (Fig. 1, “rightmost router”) so that the switch is interposed between the router and the plurality of devices (col. 8, lines 18-20; col. 9, lines 5-10); and
  - b. A mechanism to determine (col. 5, lines 35-50), using layer 3 (L3) information (col. 3, line 55-col. 4, line 25; IP) contained in a packet received (col. 5, line 65 – col. 6, line 5) by a source port of the plurality of ports (Fig. 1, connection to external routers), which one of the plurality of ports is coupled to a destination device (Fig. 1, connection to multiple LANs) and to transfer information contained in the packet to the destination device without use of a routing function (col. 5, lines 35-50; the device uses a “bridge-like manner” for IP traffic).
13. For claim 20, Perlman teaches that the mechanism analyzes data transmitted between the router and the destination device (Fig. 2, esp. 2B, #64).
14. For claim 21, Perlman teaches that the data is packetized in accordance with an Address Resolution Protocol (col. 5, line 50 – col. 6, line 5; ARP).
15. For claim 22, Perlman teaches that the mechanism generates a data structure (col. 6, lines 20-37; router database) including layer 2 (L2) addresses (data link layer addresses, i.e. MAC)

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and corresponding layer 3 (L3) addresses associated with the destination device prior to transferring information to the destination device (col. 6, lines 37-50).

16. Claims 28, 45, 46 are drawn to the limitations in claim 22. Perlman also teaches the BLIP operating transparently to the destination device, the source device, and the router (Fig. 3), and that the structure is a table (col. 2, lines 35-50; a database with one-to-one association is considered a table). Therefore, since claim 22 is rejected, claim 28 is also rejected for the reasons above.

17. For claim 29, Perlman teaches that the first network is separate and distinct from the second network and the switch is remotely located from the router (Fig. 1).

18. For claims 48 and 49, Perlman teaches a lack of use of a routing protocol (col. 9, lines 55-65).

### ***Claim Rejections - 35 USC § 103***

19. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

20. Claims 24-26, 37, 44, 47, 50, 51, 53-58, 60-69, 71-75 are rejected under 35 U.S.C. 103(a) as being unpatentable over Perlman as applied to claim 18 above, and further in view of Ross (5,394,402).

21. Claims 24, 44, 47, 53, 54, 60 are drawn to the limitations in claims 18 and 22, but are also drawn to a plurality of at least three virtual local area networks, with the source device located on the first VLAN, and the destination device located on the second VLAN. Perlman,

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the primary reference, teaches the interconnection of various “sub-net” LANs that are similar to virtual LANs (col. 4, lines 53-65), and that the source and destination device may be on separate LANs (col. 12, lines 57-67), but does not expressly disclose that the networks are VLANs. Ross teaches a method (abstract) of connecting at least three networks (Fig. 3) where the three networks are virtual local area networks (VLAN or virtual LAN) (col. 2, lines 45-50) that may communicate with each other using MAC address conversion (col. 5, lines 15-35). At the time the invention was made, one of ordinary skill in the art would have used VLANs, which were well known in the art, in a Perlman “extended LAN” so as to achieve certain benefits such as better security and bandwidth (col. 2, lines 6-30). Therefore, since claims 18 and 22 are rejected, claim 24 is also rejected for the reasons above.

22. Claim 25 is drawn to the limitations in claim 21. Therefore, since claim 21 is rejected, claim 25 is also rejected for the reasons above.

23. For claims 26, 64, 67, 71, the mechanism uses the information by determining both the L2 address of the destination device (col. 9, lines 5-10) and the port coupled to the second network (col. 8, line 58 – col. 9, line 4) based on the L3 address of the destination device supplied by the source device (Fig. 2a, #46), and setting a destination of packets of the data to the L2 address of the destination device (Fig. 2b, #68).

24. Claim 37, 51 are drawn to the limitations in claim 26, and also to the transparency of operations, which Perlman teaches (see claim 28). Therefore, since claim 26 is rejected, claim 37 is also rejected for the reasons above.

25. Claim 50 is drawn to the limitations in claim 45. Therefore, since claim 45 is rejected, claim 50 is also rejected for the reasons above.



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26. Claims 55-58 are drawn to the limitations in claims 20, 21, 29, and 45, respectively.

Therefore, since claims 20, 21, 29 and 45 are rejected, claims 55 - 58 are also rejected for the reasons above.

27. Claims 61-63 are drawn to the limitations in claims 20, 21, and 29, respectively.

Therefore, since claims 20, 21, and 29 are rejected, claims 61 - 63 are also rejected for the reasons above.

28. Claims 65 and 66 are drawn to the limitations in claims 21 and 29, respectively.

Therefore, since claims 21 and 29 are rejected, claims 65 and 66 are also rejected for the reasons above.

29. Claims 68 and 69 are drawn to the limitations in claims 21 and 29, respectively.

Therefore, since claims 21 and 29 are rejected, claims 68 and 69 are also rejected for the reasons above.

30. Claims 72 - 75 are drawn to the limitations in claims 45, 29 and 46, respectively.

Therefore, since claims 21, 29, and 46 are rejected, claims 72-75 are also rejected for the reasons above.

31. Claim 23 is rejected under 35 U.S.C. 103(a) as being unpatentable over Perlman as applied to claim 18 above, and Ross as applied to claim 24 above, and further in view of Civanlar et al. (5,805,805).

32. For claim 23, Perlman teaches that the destination device includes at least two LAN networks (see rejection of claim 18), but does not expressly disclose that the destination device includes a server associated with the first network of being a virtual local area network of at least

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two virtual local area networks. Perlman does not expressly disclose the setup of a LAN, except for the definition that they contain multiple computers (col. 1, lines 20-25) and that they operate as subnets (col. 4, lines 55-65). Ross teaches the usage of multiple VLANs and communications between devices on different VLANs (col. 2, lines 45-50), and would be combined for such for the reasons above, but does not expressly disclose a server on a VLAN. Civanlar teaches this limitation (abstract; Fig. 1-3). At the time the invention was made, one of ordinary skill in the art would have recognized that a Perlman LAN includes a server, such configurations being well known in the art, so that Perlman may be compatible with LAN configurations that are well known in the art, i.e. so that a user can connect to the internet through a local gateway server or ISP (Perlman, col. 1, lines 20-35), which would allow the LAN to have greater bandwidth, as internal networks are faster than external networks. Such a system would also provide servers for different buildings or corporate divisions (col. 1, lines 20-30).

### ***Conclusion***

33. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. They consist of textbook, RCE, and proposal standards which show the state of the art at the time of 1995 in regards to switching, routing, ARP, OSI networking, Virtual LANs, and the like.


34. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Melvin H. Pollack whose telephone number is (571) 272-3887. The examiner can normally be reached on 8:00-4:30 M-F.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Valencia Martin-Wallace can be reached on (571) 272-6159. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

MHP  
29 April 2005

  
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